NATURAL BRIDGES NATIONAL MONUMENT

1) Night Sky Monitoring of Parks of the Southeast Utah Group

Name: Charles Schelz Email: charlie_schelz@nps.gov

Name of institution represented: National Park Service

Purpose of study
To develop protocols and gather baseline data on night sky light levels at the four units of the Southeast Utah Group. This project will result in the development of a Night Sky Long-Term Monitoring Plan and a report that will be a template for future reports. This report will detail all protocols, fieldwork required, and test site locations, it will also provide baseline data and analysis for comparison with future monitoring.

Objective 1:
A "Night Sky Long-Term Monitoring Plan" that outlines, in detail and with examples, all protocols, database management, and analysis to be performed at each test site. It will also clearly specify night sky monitoring needs and objectives. And will provide a clear understanding of how the monitoring program will support management information needs.

This plan will identify site-specific current resource impacts. It will also attempt to address future concerns and problem areas. It will set monitorinig management standards for resource conditions and will identify and assign priorities to areas of greatest concern.

Objective 2:
An initial report of the first completed round of Night Sky monitoring based on the new system recommended in the Night Sky Long-Term Monitoring Plan (Objective 1). This will include all test sites at all four units of the Southeast Utah Group..

2) HISTORIC VEGETATION ANALYSIS THROUGH THE USE OF REPEAT PHOTOGRAPHY AT THE SOUTHEAST UTAH GROUP.

Name: Charles Schelz Email: charlie_schelz@nps.gov

Name of institution represented: National Park Service

Purpose of study

Little is known of the historic vegetative cover of any of the habitats of the Southeast Utah Group. The pre-grazing condition of the vegetation has been described anecdotally, but any scientific measurement or quantitative description does not exist. The use of photography to gather this information has become our last chance to determine the pre-grazing conditions. Domestic livestock grazing was introduced into the area of the Southeast Utah Group during the late 1870's. This gives us little latitude for locating historic photographs considering photography was a new invention in the 1840's. Powell's second Colorado River expedition of 1872 had a photographer (E.O Beaman) on board and many of the original glass plates survive. Many of these photos are along the Green and Colorado Rivers but some are also in the uplands above the river. The river environment is presently being studied by Belnap and Webb (personal comm. 1998) from the confluence of the Colorado and Green Rivers south through Cataract Canyon. The Belnap and Webb study, which is utilizing historic photos, is concentrating on the river environment without much analysis of the upland vegetation communities. I propose to search out all existing historic photos that are available and piece together a picture of our upland communities as they existed before the advent of domestic livestock grazing. I also propose setting up permanent long-term monitoring photo stations at the historic photo sites that have a clear and identifiable vegetative element.

This characterization of the ecosystem vegetative change and, in particular, the condition of pristine conditions of the varied habitats of the SEUG is rated as a Top Priority Critical Research Need by the 1993 Southeast Utah Group Research Plan. This work may also facilitate the understanding of the history of the invasion of exotic species into the area and the impacts of visitor use.

OBJECTIVES: Gather baseline historic photographic data and develop a long-term photographic monitoring program on vegetation change in Arches and Canyonlands National Parks, and Natural Bridges and Hovenweep National Monuments (The Southeast Utah Group).

1) Locate all existing historic photographs and in particular pre-1880 photos of the area that encompasses the Southeast Utah Group.

2) Determine the location of each photo with vegetative analysis possibilities and establish a permanently marked and documented photo-station for past, present, and future analysis of vegetation change.

3) Analyze historic and repeat photos for species composition and cover change. Also, to look at visitor use impacts.

4) Produce a final report, and lay the foundation for subsequent reports and monitoring that will assist National Park Service managers in developing resource management plans that could protect habitats of the Southeast Utah Group. This information will help in assessing impacts of internal and external operations, and visitor impacts.

HOVENWEEP NATIONAL MONUMENT

1) Floristic Study of Hovenweep National Monument.

Name of principal investigator: Charles Schelz Email: charlie_schelz@nps.edu

Name of institution represented: National Park Service

Purpose of study
To obtain a complete list of plants at each unit of Hovenweep National Monument. Plant communities will be defined and mapped. Provide biological inventory data on vascular plants in parks of the Northern Colorado Plateau Inventory and Monitoring Network

2) Biological inventory of National Parks on the Northern Colorado Plateau – Amphibians and Reptiles.

Name of principal investigator: Erika Nowak Email: erika.nowak@nau.edu

Name of institution represented: Northern Arizona University

Purpose of study
Provide biological inventory data on vertebrate animals and vascular plants in parks of the Northern Colorado Plateau Inventory and Monitoring Network. This proposal addresses the inventory of reptiles and amphibians at HOVE.

3) Biological inventory of National Parks on the Northern Colorado Plateau - Mammals.

Name of principal investigator: Mike Bogan Email: Mbogan@unm.edu

Name of institution represented: U.S. Geological Survey

Purpose of study
Provide biological inventory data on mammals in parks of the Northern Colorado Plateau Inventory and Monitoring Network. This proposal addresses the inventory of mammals at HOVE.

4) A study of the distribution of Catocala benjamini and related Catocala in northeastern Arizona and southeastern Utah.

Name: John Peacock Email: lepnut@worldnet.att.net

Name of institution represented: Ohio State University

Purpose of study
The purpose of this study is to delineate the distribution of Catocala benjamini and related Catocala in northeastern Arizona and southeastern Utah, areas that are poorly, if at all, collected, and where little is known of Catocala distribution. A secondary objective is to determine the larval host plant (Quercus) associations where Catocala are collected.

5) Night Sky Monitoring of Parks of the Southeast Utah Group

Name: Charles Schelz Email: charlie_schelz@nps.gov

Name of institution represented: National Park Service

Purpose of study
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Objective 2:
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6) HISTORIC VEGETATION ANALYSIS THROUGH THE USE OF REPEAT PHOTOGRAPHY AT THE SOUTHEAST UTAH GROUP.

Name: Charles Schelz Email: charlie_schelz@nps.gov

Name of institution represented: National Park Service

Purpose of study

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